## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 10 February 2005 (10.02.2005)

**PCT** 

## (10) International Publication Number WO 2005/012988 A1

(51) International Patent Classification: G02F 1/1335

(21) International Application Number:

PCT/KR2004/001933

(22) International Filing Date: 30 July 2004 (30.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10-2003-0053131 31 July 2003 (31.07.2003) 10-2004-0008419

(71) Applicant (for all designated States except US): DOOSAN CORPORATION **ELECTRO-MATERIALS** [KR/KR]; 602 Yongje-dong, Iksan-city, Jeollabuk-do 570-350 (KR).

9 February 2004 (09.02.2004)

(72) Inventors; and

(75) Inventors/Applicants (for US only): HWANG, Jang-Hwan [KR/KR]; 433-4 Gasuwon-dong. Seo-ku, Daejeon 302-800 (KR). PAE, Chong-Pll [KR/KR]; 108-1402, Neulpureun-Byeonsan Apartment, Mangpo-dong, Paldal-ku, Suwon-city, Kyeonggi-do (KR). KOOK, Min-Cheol [KR/KR];

103-904, Bowon Apartment, 692, Pungdeokcheon-dong Pungdeokcheon-ri, Suji-eub, Yongin-City, Kyeonggi-do 449-846 (KR).

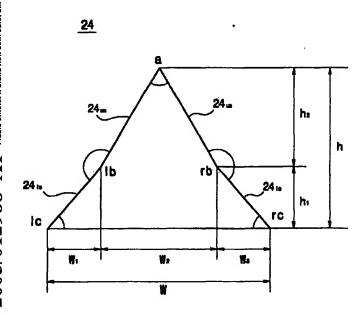
- (74) Agent: DARAE PATENT FIRM; 10th Floor, KIPS, 647-9, Yeoksam-dong, Kangnam-ku, Seoul 135-980 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN. TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM). European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

[Continued on next page]

(54) Title: PRISM SHEET HAVING CONCAVE PENTAGONAL



(57) Abstract: A prism sheet having a concave pentagonal structure is disclosed. The prism sheet comprises a base layer, and a prism array disposed on and supported by the base layer. The prism array is composed of a plurality of prisms aligned in parallel and one beside the other. The transversal cross-section of each prism has a shape of concave pentagon, which is symmetrical about a vertical line passing the apex. The interior angle  $\alpha$  of the apex is  $30^{\circ} \le \alpha \le$ 120°, the exterior angle B formed by the upper slant side and the lower slant side is B < 180°, the interior angle y of the lower vertex formed by the lower slant side and the base is  $5^{\circ} \le y \le 85^{\circ}$  and the length w of the base is  $30\mu m \le w \le 100\mu m$ . Preferably, the interior angle  $\alpha$  of the apex may be 40°  $\leq \alpha \leq 100^{\circ}$ , the exterior angle B formed by the upper slant side and the lower slant side may be  $160^{\circ} \le \beta \le 179^{\circ}$ , and the interior angle y of the lower vertex formed by the lower slant side and the base may be 30° ≤  $y \le 60^{\circ}$ . Preferably, the length w of the base may be  $40\mu m \le w \le 60\mu m$ .